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BODLEIANA BIBLIOTHECA

A

Philosophical Account

OF THIS

HARD FROST.

From Whence

Is Rationally concluded what *Effects* it may probably have upon *Humane Bodies*, as to *Health* and *Sickness*.

Both in relation to the time of the *Frosts* Continuance, and to the time of *Thaw* that shall succeed.

With *Cautionary Directions* for the prevention of such *Distempers* as are likely to be the *Natural Consequence* of both those Seasons.

Which *Directions* are not only *Calculated* for this *present* Season, but are *designedly* adapted to serve upon the like occasion *for time to come*.

PSAL. 147. 17.

He casteth forth his Ice like Morsels; who can stand before his Cold?

Written in Answer to a Letter of a Person of Quality, and at his Command made publick for the Common Good.

By JOHN PETER *Physician.*

LONDON, Printed for *Sam. Smith* at the *Prince's Arms* in St. *Pauls Church Yard*, 1684.

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A

Philoſophical Account OF THIS HARD FROST.

Honoured Sir,

YOurs received, and upon weighing its *Contents*, I find my ſelf involved in a *Dilemma*: If I ſhould ſtifle it by *ſilence* or anſwer it by *excuſe*, I ſhould give you a juſt occaſion to be jealous of my obedience to that *Command* (I have always more than pretended) you juſtly have over me: On the other hand, by readily anſwering *your deſire*, I ſhall pitifully expoſe my inſufficiency for ſuch a *Task*: I confeſs I cannot for my life be ſo ungrateful and diſobliging, as to become guilty of the former part, and therefore conſidering into *whoſe hands* I ſhall fall, I ſhall the cheerfuller proceed in doing my endeavour to anſwer *your deſire*, *viz.* That I would preſent you with an *Hypotheſis* of the *Natural Reaſon* of *Heat* and *Cold*, *Froſt* and *Thaw* (2.) That I would give you my Opinion, What *Effects* this extream Cold and *Froſty Seaſon* may probably have on *Humane Bodies*, as to *Health* and *Sickneſs*.

In undertaking to Salve the *Phænomena* of *Meteors*, I ſhall not look back into the *Ægyptian Darkneſs* of the *Peripatetick Philoſophy* (you ſeeming to intimate, that the diſſatisfaction you found in its *Theory*, gave you Incitement to put me upon this *Deſign*) to ingulf my ſelf and you in un-

reſligible *Notions*, but ſhall launch out into a more genuine and better grounded *Hypotheſis*, wherein all *Appearances* of *Nature* are eaſily *Solvable*. Therefore to cut my *Suit* according to my *Cloth*, to fit my *Anſwer* to your *Requeſt* to the *ſize* of a *Letter*, I ſhall (1.) briefly offer you an *Hypotheſis* of *Meteors* in general. (2.) Of *Heat* and *Cold*, *Froſt* and *Thaw* in particular. (3.) I ſhall endeavour from the ſame *Theory* rationally to conclude what *Effects* this extream Cold and Froſty *Seaſon* may probably have upon *Humane Bodies*, as to *Health* and *Sickneſs*.

That the ſeveral *Appearances* in *Metereology* (as all other *Phænomena's* in *Nature* are beſt reſolvable by *Spagiritick Principles* (viz. *Spirit*, *Sulphur*, *Salt*, *Water*, and *Earth*) daily Experience evinces, and that according to their various *Motions* and different *Proportions* in mixt Bodies, are the ſaid *Bodies* built up and demoliſh'd; rallied up, and taken in pieces again.

As in *Meteors*, ſo alſo in *Minerals*, the chief active *Principles* are *Salt* and *Sulphur*, they are both for the moſt part *conceived* in the ſame *Womb*: As the Production of the laſt is made by the ſaid Fermentative *Principles* or *Elementary Particles* grown *compact*, and made *concrete* in the teeming *Womb* of the Earth: So whilſt the ſaid Fermentative *Principles* are fluid, and in *Solution*, fluctuating here and there in the *Earths bowels*, they fume out various *Exhalations* through the ſubteraneous *paſſages*, which mingling with the *Airy Corpuſcles*, ſupply the *Region* of the Atmo-ſphere, with the uſual variety of *Appearances* obſervable by every vulgar Eye, as Clouds, Wind, Snow, Hail, Rain, Dew,

Dew, Hoary Rimes, the vicissitude of *Heat* and *Cold*, &c. as also with others more unusual and strange, as Fiery Drakes, Dancing Torches, Burning Globes, *Ignis Fatuus*, *Ignis Lambens*, *Parelii*, & *Parastena* (many Suns and Moons) and many other wonderful *Apparitions*.

2. From this short *Hypothesis* of *Meteors* in general, I raise the following one of *Heat* and *Cold*, *Frost* and *Thaw* in particular.

First, The *Particles* of Cold being conceived in the Frozen *Womb* of the Earth (in that *Climate*, where the enlivening and thawing *Beams* of the Sun seldom or never approach) passing through the *Pores* of the Earth into the Airy *Region*, are brought to us through the *Air* (their proper Vehicle) by certain peculiar *Winds*, which in their Motion, meeting with Liquid *Watery Bodies*, do co-agulate them; by which means those Bodies we call *Ice*, *Snow*, &c. are constituted.

Secondly, As there be *Corpuscles of Cold*, so are there also *Particles* of *Heat* begot in a different *Womb* of the Earth in those *Regions*, which are mostly or always visited with the Parching Beams of the Sun, which are brought to us at other Seasons through the same *Vehicle* of Air by different and contrary *Winds*, which in their Motion meeting with those of Cold (either in the *Air* or *here* below co-agulated in Watry Bodies) do by quite altering their *Textures*, wholly resolve, mortifie, and thaw them (as we daily see some Salts do others of a different *Texture*) so that thereupon the said *Particles* of Heat prevailing, a warm *Temper* of Air succeeds, and the *Weather* becomes quite altered, and that sometimes very suddenly, even to *Admiration*.

And that the *Phenomena* of almost all *Meteors*, and their true Reasons, are deduceable from the *Exhalations* of *Sulphur* and *Salts*, as *Nitre*, *Vitriol*, *Alum*, and *Sal Armoniack*, is apparently conceivable by the following Instances of some *Artificial ways* of representing *Heat* and *Cold*: As

If you put *Oil of Vitriol* to Water in a Phial, and mix them well together by shaking, you will find, that those two Liquors (tho cold to touch) will immediately contract a greater *Heat* than the hand that holds the Glass can well suffer: and from the same cause you may make Ice it self to cause heat to another cold Liquor, by proceeding as before, with *Ice* put into *Oil of Vitriol*.

If you please to mix *Sal Armoniack* with *Saturn Ore* in a Mortar, and put them into a long Glass, and shake them well together: whilst the *Solution* is making, you will find the Glass feel very Cold, and if at the same time you wash the outside of the Glass with Water, you will find as you pour it on, long Flakes of *Ice* will immediately be congealed: The same will *Sal Armoniack* of it self do, being dissolved in *Water*.

Besides the trite and common *Experiment* of making it *Freeze Artificially*, *viz.* by putting either *common Salt*, or Sea-Salt, or Nitre, or Vitriol, or Sal Armoniack, and Snow, together into a Pewter Flagon, set on a Joyn'd-stool by the Fire-side, upon which some Water is spilt, & churning them together with a Rolling Pin (or some such Instrument) in a little time the Flagon will be so *hard frozen* to the Stool, that without some difficulty it cannot be *parted*.

If you put Snow into a *Pewter-platter*, and set it upon a Chafing-dish of *live Coals*, and in the midst of the *Snow* you place a Glass of *Water*, you will find,

find, that as the *Snow* melts, the *Water* in the Glass will be *frozen*.

The Reason of which *Processes* is this, *viz.* The *Nitrous* Particles of *Snow* being driven from their *hold* by the *Fire*, and those *Salts* (for any of these *Salts* being added to *Snow* or *Ice*, do presently dissolve their Texture) they in their *flight* joyn themselves to the Neighbouring Water, and so *congeal* and turn it to *Ice*.

Thirdly, I am (according to my propos'd *Method*) come to give you my *Opinion*, what *Effects* this extream Cold *Frosty Season* may probably have upon Humane Bodies as to *Health* and *Sickness*; which I shall consider in Two Parts, (1.) In Relation to the time of the *Frosts* continuance. (2.) In Relation to the time of Thaw.

Whilst the *Frost* continues, and the Minute Keen *Particles* of Cold are in such swarms brought to us by the Northern Winds, their peculiar *Vehicle* for this *Climate* (as they are by the Southern Winds peculiar likewise to them, over whom that *Pole* is Elevated) they close up the Pores of our Skins, so that the usual *Vent* by *Transpiration* being stopt up, our inward *Ferments* thereby become mightily *invigorated*; as is manifest in that *Trite* Observation, that our *Appetites* to Food are stronger, and our *Digestion* better, in *Frosty* than *Warm Weather*: And since our *Spirits* by those Particles of Cold are driven up and confined to a narrower *room* than ordinary, the *Sulphurous* parts of the *Blood* wanting their wonted *space* to dilate themselves in, are apter now than in warm Weather, upon every little occasion to take Fire, and to be thrown into an unnatural *Ferment*, thereby laying the Foundation of *Feavors* of all sorts, *Small Pox*,

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Pleurisies, *Peripneumonia*, all sorts of Internal *Inflamations*, External *Cutaneous Affections*, &c. as also *Gutturs*, *Asthma's*, *Lung lasting Coughs*, *Chin Coughs*, &c. For which latter Catalogue I take the peculiar reason to be, because the Blood at such a time being over-charged with superfluous *Serosities* (their wonted *passage* by evaporation being stopt) doth pour upon the *Lungs* so great a quantity thereof, that they are (as it were) drowned and damned up therewith, upon which account great *Obstructions* must needs succeed, the Parents of those and such like Distempers.

And should this *Frosty Season* continue one Month longer (the time wherein the *Blood* of all *Animals* is inspired with a new *Ferment*, and begins to *Incarniate*) the case would be much with our *Bodies*, as it is with *Vessels* which are filled with *Wine* whilst it is fermenting, and immediately close *bung'd* up; where the *Vessels* and the *Liquor* would be in great danger of being *spoiled* and *lost*.

And on the other hand, should the *intenseness* of the Season presently abate, and the *Atomes* of *Cold* be on a sudden now shattered to *pieces* by other *particles* of a different *composure*; yet since for almost two Solar Months they have had their impressions upon us, we shall be made sensible of their *influence* a longer time than generally we are aware of, they having undoubtedly *imprinted* on our *Bodies* such Morbifick *predispositions* (like *seeds* of various *Diseases*) as will be ready upon *fit* occasions (for many *Months* next succeeding) to spring up and be brought into *Act*, to the endangering the whole *frame* of our *Constitutions*.

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Now that those persons whom this *Frosty Season* found in health, and are so now, should be put in a way to continue in the same *state*, so long (*however*) as it lasts, I shall (since it lights so *pat* in my way) *caution* them of two things.

1. That they take care, they do not too much exalt the *Ferment* of the *Blood* by too violent *Exercise*, or by too copious a supply of *Spirituous Liquors*: which last is too frequent a Custom with some, who finding themselves externally *Cold* in such an extream *frosty* time as this, do (upon a mistaken *Notion*) allow themselves a greater *liberty* (than at other times they were wont) in the use of Distilled *Spirits*, *Brandy*, *Wine*, and other *Strong Liquors*, whereby under pretence of procuring *Heat* and *Vigor*, they certainly endanger the *stifling* and *suffocating* the Natural *Heat* within them.

2. That on the other side they be not careless in opposing the sharp and keen *particles* of *Cold* by warmth from moderate *Exercise*, or by a due and accustomed use of *Spirituous Liquors*; for let the *Blood* and *Liquid Juices* of our Bodies be invigorated by a due supply of *Spirituous*, *Saline* & *Sulphurous* Particles, whereby they may be kept constantly in motion, &c. then there will be no fear of our receiving any injury by Cold: but where through necessity or carelessness, those needful supplies are wanting, it is no great wonder if such do fall *Victims* to this almost-intolerable *Season*: For from what parts of our Bodies soever, the *Spirituous particles* shall be forc'd to with-draw themselves and make a *Retreat*, they will instantly be supplied with the nimble Particles of *Cold*, which will congeal our

confined humours; and if suffered to prevail, must necessarily put the *Spirits* to a *rout*. For that the Particles of Cold at some times and in some places are so intense, that they irrecoverably destroy the *Ferments* of *Men* and other *Animals*, is evident by their killing of many *Men* and *Beasts* in some Countreys, as in *Russia*, *Greenland*, *Norway*, &c. where the *Frosts* are sometimes so strong, that *Men* are often *frozen to death*; and I have read and been personally informed, that in those Countries *Men* in *Travelling* have been brought to their *Inns* frozen to death on *Horse-back*, and been found so stiff and rigid, that they have sat up strait like *Statues*.

2. Now I am come to consider what effects the *Thawing Season* (immediately succeeding this *Frost*) may probably have on Humane Bodies, as to *Health* and *Sickness*.

When the *Southern Winds* shall fill our *Hemisphere* with the *Particles* of Heat and Moisture, and in carrying them through the common *Vehicle* of the *Air*, shall with their great and numerous *Swarms*, meet there with those of *Frost* and *Cold*, and being of a different *Texture*, shall suddenly *resolve*, *thaw*, and take them all to pieces again, then will all *Putrefactive Ferments* grow vigorous; and upon the unhinging and unrivering the *Atomes* of *Cold* great alterations must needs be produced in the Bodies of all *Animals*.

Whatever Cold, Frosty, and Snowy Winters may conduce to the invigorating the Earth, to make it the more Fertile in producing *Vegetables* (I shall not here examine;) but if we look back into those Years in which have happened the most *Epidemical Malignant Diseases*, and the greatest *Mortalities*,

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we shall find they have succeeded the *Coldest*, most *Frosty*, and *Sharpest Winters*.

When after a *Vigorous Assault* the *Particles* of *Cold* have kept possession of the minute *Portals* of our *Bodies*, for (it may be) two or three *Revolutions* of the *Earth Attendant*, they shall be so strenuously *attaqued* by the prevailing *Particles* of a contrary *Extream*, that they shall be forc'd to surrender and to quit their *Hold*; what *quarter* then can we expect should be given to the various *Juices* of our *Bodies*? Can any *Extream* be *Friendly* to *Nature*? Can such sudden *Alteration* of the Weather prove otherwise, than mightily prejudicial to our *Healths*? Those Passages of our Bodies which were so long so closely lock'd up, will now be laid open, and become *laxe* and *penetrable*, liable to receive such *Exotick putrefactive Ferments* as the *Air* (being saturated with) shall present: whence is that trite and true *Observation*, that in Cold, Raw, *Thawing Weather* People generally take more Cold, and are more prone to Diseases than at other *times*: And it is *mostly* of *such* Weather, that *Aged* and Infirm *Folks* do (by their *Almanacks*, as 'tis said, in their Bones) so truly prognosticate, and discern its *approach* before-hand. For in such cold, open Weather, the raw and moist *Particles* in the *Air*, insensible insinuating themselves into our gaping Pores, slide into the *Mass* of *Blood*, whereby it becoming overcharged with *Superfluous Serosities* (as from another cause, before intimated, it was, whilst the *Frost* lasted) it carries them in a full Current to the *Lungs*, where depositing them, they there stagnate, and thereby become the cause of

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desperate *Coughs*, *Asthma's*, *Gouts*, *Rheumatisms*, *Drowsiness*, with manifold other *Symptoms*, vulgarly ascribed to the *Scurvey*.

Thus (Honoured Sir) according to my present Sentiments of Things, I have endeavoured to comply with your desire; which tho it be far from being done *Dignum Rei*, yet of such as it is (I will presume to say) I question not its *Candid Acceptance*: your Commands gave it Life, had it not been for that, it had never had Being: And the daring *Atoms* of *Cold* insinuate themselves into the *Ink* in my *Pen* whilst I am Writing, and 'tis by the *Magick* of your Commands if my Intellectuals have been kept *Frost-free*.

Feb. 2. 168[illegible].
E. Musæolo
Lewishamiensis.

Honoured Sir,

Your most Humbly

Devoted Servant,

J. P.

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